

# Phase 4: Implementation Design – Construction – Acceptance



National Renewable Energy Laboratory

# Phase 4: Implementation

## Phase 4:

Project Implementation –  
Design, Construction, Project Acceptance

1 – 2 years or longer

## Phase 5:

Post-Acceptance Performance

Up to 25 years including construction

### ★ Post-Award Conference

#### Project Design and Review

- ☐ Final Project Design
- ☐ Design Submittals
- ★ Agency review and approval
- ★ ☐ ESCO provides insurance and bonds

### ★ Notice to Proceed with Construction

- ☐ **Construction**, inspections, documentation, training★

- ☐ Commissioning and Post-Installation M&V★

### ★ Acceptance of installed project

#### Key

- ★ Agency Action
- ☐ ESCO Action
- ★With Agency Participation/Oversight

# Post-Award Conference

- Participants
  - Agency —  
CO, COTRs, inspectors, others on acquisition team
  - ESCO —  
Project manager, design, construction, commissioning, M&V, and performance-period services personnel
- Purpose
  - Review roles, responsibilities, expectations, timelines, and communication protocols
  - Review schedules for design, construction
  - Establish protocols for site access and submittal review

# Submittals (per IDIQ § C.5 and TO RFP)

- Design and construction submittals
  - Designs, drawings, installation plans
  - Manufacturer's cut sheets for actual equipment to be installed
  - Construction schedule
- See Sample Deliverables for Task Orders, Attachment J-4 of IDIQ

# Design Review

- Agency reviews and verifies:
  - Compliance with requirements in TO
  - Design clearly addresses ECM interfaces with existing equipment
  - Drawing particulars are in compliance with TO
- FEMP ESPC team reviews for advanced technologies

## ESCO's submittals constitute requirements of the contract after acceptance by agency

- Acceptance of submittals does not relieve ESCO of responsibility to meet facility standards of service and deliver guaranteed cost savings (IDIQ C.5.1.A).
- ESCO may not deviate from approved submittals.
  - If deviation is required, the deviation must be approved by the Contracting Officer prior to installation.

# Notice to Proceed with Installation

- CO issues notice AFTER:
  - ESCO provides
    - Acceptable performance and payment bonds (as required)
    - Insurance certificates
  - Agency approves
    - ESCO's designs and construction plans
    - Related submittals



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# ECM Installation Activities

- Agency verifies proper ECM installation per TO requirements and approved submittals
- Agency monitors ECM installation activity
- Agency witnesses ECM commissioning and M&V activities
- FEMP ESPC team is available for support on advanced technologies

# Agency Post-Installation Inspections and Verifications

- Agency verifies receipt and reviews:
  - As-built drawings in format specified in TO
  - O&M manuals & related O&M procedures
  - Spare parts lists and provided spare parts
  - Manufacturer warranties
  - ECM training materials & proposed schedule
  - Commissioning report
  - Post-installation M&V report

## COR Post-Installation Activities

- Verifies completion of construction punch list items
- Verifies resolution of any ECM performance deficiencies
  - FEMP can help with resolution of performance issues
- Verifies that any revised post-installation submittals are acceptable
- Coordinates agency staff training with ESCO
- Coordinates inspections of rebate-related ECMs with ESCO and utility

# Commissioning Report (IDIQ § C.5.4)

- Agency review of report should verify:
  - ESCO compliance with Commissioning Plan
  - Commissioning results meet or exceed design intent and facility performance requirements
  - Any seasonal testing to be required at later date
    - Example: Chiller performance test if ECM installation is completed before summer peak loads

# Agency Reviews Post-Installation M&V Report

- Agency verifies ESCO compliance with M&V Plan, and that:
  - Energy and O&M baseline data is consistent with agreed-upon baseline conditions
  - Energy rates for first year of performance period are as specified in TO
  - Installed ECMs have the potential to meet or exceed the guaranteed annual cost savings
- FEMP ESPC Team also reviews Post-Installation Report

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# Acceptance of Project Implementation – After All Post-Installation Submittals Are Approved (IDIQ § E.3)

- CO provides written notice of acceptance to ESCO
  - Confirms project complies with all TO requirements
  - Advises that ESCO may submit first invoice
  - Begins the performance period
- Early acceptance of individual ECMs saves on interest costs (IDIQ § E.3)
  - ECMs completed early in implementation period

# Handling Changes During Implementation Phase

- Variances between design and as-built installation
  - ESCO and agency should track changes
  - Changes and energy impacts should be documented in Post-Installation Report
- Preferred: Handle changes so that no revision of TO schedules or financing structure are required
- Timely negotiations preserve the project schedule



# Prepare for Contract Administration

- Follow your Contract Management Plan –  
This is the plan that ensures continuity of contract administration as individuals come and go
  - Prepare Plan at TO award
  - Follow the plan or modify during design/construction and after project acceptance
- Maintain all ESPC project documents — especially M&V and commissioning data and O&M manuals and training materials
  - Audits, turnover, ...

Q1: How is the ESPC construction process different from conventional design-building construction?

A: Commissioning and post-installation M&V are required by contract.

Q2: Do the ESCO's submittals (designs, drawings, etc.) constitute requirements of the contract?

A: Yes.

Q3: What is the main M&V-related activity during the construction period?

A: Post-installation M&V activities and report.

Q4: Name two post-installation ESCO submittals related to O&M.

A: O&M manuals & related O&M procedures

Spare parts lists and provided spare parts

Manufacturer warranties

ECM training materials & proposed schedule



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